

ABSTRACT

5 A system is provided for detecting a low-power error condition in a local area
augmentation system (LAAS). The system receives a radio signal from a global positioning
system (GPS) satellite and measures the wide band and narrow band power of the radio signal in
real time. The system estimates the signal-to-noise ratio of the signal in real time based on
average wide band and narrow band power measurements. A low signal-to-noise ratio indicates
10 a low power condition . The system then calculates an error contribution due to the low power
condition and sums the error contribution with other error contributions to determine the total
error in a navigational measurement. To ensure error overbounding, the system may subtract a
confidence offset from the signal-to-noise ratio to obtain a lower confidence limit.

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